



Pamela J. Riley
Vice President
Federal Regulatory
AirTouch Communications
1818 N Street, N.W., Suite 800
Washington D.C. 20036

Telephone: 202 293-4960
Facsimile: 202 293-4970

May 7, 1999

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C.

RECEIVED
MAY 7 1999
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: WT 97-207, Calling Party Pays

Dear Ms. Salas:

On Tuesday, May 4, I met with staff from the Wireless Telecommunications Bureau, who requested that I provide additional information about several aspects of AirTouch's experience with calling party pays. I am enclosing two copies of the requested information for inclusion in the above referenced docket, in accordance with the Commission's rules.

Please stamp and return the provided copy to confirm your receipt. Please do not hesitate to contact me should you have any questions.

Sincerely,

Pamela J. Riley /BKR
Pamela J. Riley

Attachment

cc: Jim Schlichting
Jeanine Poltronieri
David Siehl
Joseph Levin
Elizabeth Lyle
Nancy Boocker

No. of Copies rec'd
List ABCDE

044

AirTouch Response to Questions Concerning its CPP Experiences

European regulatory experience with calling party pays:

Attached are several documents concerning investigations in Europe focused on influences over the price of a landline to mobile call.

The first is a December 1998 decision from the Monopolies & Mergers Commission ("MMC") in the U.K., concluding that Vodafone and Cellnet's termination charges should be subject to a price cap, noting that competitive pressures in the U.K. were currently insufficient to rely totally on market forces. The MMC concluded that the price cap should be an average cap, permitting the operators full pricing flexibility to change prices in order to respond to changing customer and traffic profiles or to introduce competitive rates in particular periods of the day or week. The MMC went on to note, however, that "mobile telecommunications is still a relatively immature service in the UK. The industry and the technology are evolving rapidly and new competitive pressures may emerge. The client base is growing in size and experience and it is possible that charges for incoming calls will assume greater competitive significance in the future. In these circumstances we do not believe we have sufficient basis to expect that competitive constraints on termination charges will remain inadequate beyond the next three or four years."

The second attachment is an AirTouch submission in the MMC proceeding, providing pricing trends in a wide range of European markets, relevant to an analysis of the beneficial impacts of competition on pricing.

The third attachment is a press release from the European Commission ("EC"), summarizing their conclusions into their recent investigation into mobile rates. The EC opened in-depth investigations into 4 countries in which they found fixed termination rates to be excessive or discriminatory; 8 countries in which they found fixed operators to retain excessive amounts in interconnecting fixed to mobile calls; and 2 countries - Germany and Italy - in which they found mobile termination charges in excess of proposed benchmarks. We understand that the EC has concluded the latter two investigations and intends to close those cases shortly. This oversight confirms that in the European mobile market with calling party pays, there is no evidence of a failure of market forces to discipline mobile termination charges.

AirTouch U.S. calling party pays experience:

AirTouch currently offers Calling Party Pays in nine states, some for several years. Those states are Arizona, Colorado, Idaho, Michigan, Nebraska, New

Mexico, Ohio, Utah, and Washington. In some cases CPP is available wherever we provide service in the state; in other cases we have offered it in a particular metropolitan area.

Our earliest calling party pays offerings have had limited success, both in terms of percentage of subscribers choosing CPP and its impact on calling patterns. Past offerings have been based upon cooperative arrangements with local exchange companies, but only local exchange customers could be billed. In most markets, AirTouch billed its CPP subscribers for the incoming calls originated from other than LEC-callers, making the product confusing to sell and of less cost-controlling value than a complete CPP product. In some markets where “true” CPP was introduced (i.e., unbillable calls were never charged back to the cellular subscriber), revenue “leakage” problems were created and exploited by service providers who offered dial-around services.

AirTouch determined that the inability to bill for non-LEC callers significantly impacted the attractiveness and benefits of CPP to CMRS customers as well as the financial viability of the offering. AirTouch is now working with several companies designing a clearinghouse function to provide a wider base from which to bill and collect charges from calling parties outside the ILEC local calling area.

On notification, there have been a variety of approaches to CPP. For example, some states required blocking for CPP, some required use of 1+ dialing requirements, while others have various types of preambles. US West and Cincinnati Bell CPP products use dedicated NPA-NXXs. Preambles used in Utah and Washington do not identify a specific charge. In none of our markets have we seen evidence of wireline or wireless consumer complaints at the PUCs, consumer protection agencies or elsewhere regarding our calling party pays offering.

AirTouch approaches to customer notification are related to the fact that AirTouch did not have the intelligent network capability in the past to provide control over how CPP is offered and implemented. These capabilities include the creation of call processing and billing records and the ability to provide specific, variable announcements to the calling party. Intelligent network capability can provide a uniform “look and feel” to a wireless carrier’s CPP option across all of its markets, thereby making it more customer friendly.

The combination of clearinghouse relationships and intelligent network capability will create lower costs, more flexibility, and broader application of CPP in the future. AirTouch will be trialling two new CPP offerings this summer in two different markets using clearinghouse and intelligent network support. We are optimistic that these trials will provide additional useful information about market demand and consumer needs in the roll-out of CPP in the U.S.

Per the WTB's request, the fourth attachment is a copy of a page from a wireline bill from one of our employees, identifying charges to AirTouch mobile numbers.

Status of prepaid services:

According to industry analysts, prepaid cellular/PCS is a rapidly growing market in the United States. Analysts forecast that total prepaid subscribers (business and consumer) will increase from 975,000 in 1997 to over 39 million in 2002 – a cumulative annual growth rate (CAGR) of almost 110%. Although the growth rate for business consumers (130%) is much larger than for consumers (107%), the actual number of prepaid consumer subscribers (33 million by 2002) will far outstrip the number of prepaid business subscribers (6.3 million by 2002). In addition, prepaid penetration in the U.S. is forecast to increase by a multiple of 35 from 0.4% overall U.S. penetration to 14.1%.

Although prepaid services were initially targeted to credit challenged consumers, prepaid services also appeal to business and consumer users who want to control spending, travelers or others who want short term usage, emergency-only users, those who want to obscure their identity or who do not like to give out personal information, and those who prefer to pay cash. The bill control feature of prepaid service is a particularly important component of the future demand for wireless services. In a survey conducted by one analyst, over 60% of non-cellular users reported that improved bill control would increase their likelihood of subscribing to wireless service. Moreover, about 30% of households with incomes less than \$25,000 indicated that billing control “definitely would” increase their likelihood of cellular adoption.

Based on AirTouch's early experience with prepaid, AirTouch's prepaid customers tend to have the following demographics (as compared to AirTouch's average existing subscribers):

- lower income
- less educated
- unmarried
- younger

AirTouch's experience is consistent with independent industry analysts' conclusions regarding the demographics of prepaid subscribers.

Both industry reports as well as AirTouch's own research suggest that prepaid subscribers are more cost conscience than typical cellular subscribers. As a result, these subscribers may in fact benefit the most from a calling party pays service that allows them to remain accessible by keeping their phones “on” without having to be concerned about paying for incoming calls.

ATTACHMENT 1



Cellnet and Vodafone

Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks

December 1998

Notes by Office of Telecommunications

The MMC made these reports to the Director General of Telecommunications in December 1998. These Documents contain extracts from the reports including the key conclusions. The full version of the reports will be published in January 1999

In accordance with section 14(6) of the Telecommunications Act 1984, the Secretary of State for Trade and Industry has directed the Director General of Telecommunications to exclude from the published report certain matters publication of which appears to the Secretary of State to be against the public interest or the commercial interest of any person. Accordingly certain figures and text have been omitted. The omissions are indicated by a note in the text.

Contents

Chapter 1 Summary Paragraph 1.1 to 1.15

Chapter 2 Conclusion Paragraph 2.389 to 2.474

Appendices

1.1 Terms of reference and conduct of the inquiry

1.2 Interconnection Directive: Views submitted on behalf of Cellnet, Vodafone, OFTEL, One 2 One and European Commission Services

[Click here to go to the Monopolies & Mergers Commission Web Site](#)

[Click here to view the BT report](#)

[Back to Home Page](#)

1 Summary

Introduction

1.1. On 5 March 1998, the Director General of Telecommunications (DGT) made three references to the MMC relating to charges for calls made from fixed telephone apparatus (fixed lines) to mobile phones. The terms of the three references are set out in Appendix 1.1. Two related to the charges made by Telecom Securicor Cellular Radio Limited (Cellnet) and Vodafone Limited (Vodafone) respectively, to operators of fixed public telecommunications systems (fixed network operators or FNOs) for the delivery of calls to mobile phones on their respective mobile telephone networks, including charges for unanswered and diverted calls. The third reference related to the charges made by British Telecommunications plc (BT) to users of its fixed lines for calls made to mobile phones (fixed-to-mobile calls) on the Cellnet and Vodafone mobile phone networks.

1.2. The three references were investigated in parallel by the same Group of members of the MMC. We have submitted a separate report to the DGT on the reference relating to the charges made by BT. These volumes deal only with Cellnet's and Vodafone's charges. Certain of the appendices form part of only the Cellnet report, and certain form part of only the Vodafone report.

1.3. Mobile network operators (MNOs) such as Cellnet and Vodafone charge FNOs a termination charge for the connection of fixed-to-mobile calls. We are asked to report whether the termination charges made by Cellnet and Vodafone and their charges for unanswered calls, and unanswered calls which are diverted, operate against the public interest and if so whether the effects adverse to the public interest can be remedied or prevented by modifications to their licences under the Telecommunications Act 1984 (the 1984 Act). If we so conclude, the DGT is required to modify the licences to remedy the adverse effects.

Termination charges

1.4. The DGT considered that Cellnet's and Vodafone's termination charges were excessive, and should be regulated so as to be cost reflective. He believed that Cellnet and Vodafone were able to set the charges without significant market pressure, because someone wanting to make a fixed-to-mobile call had no choice but to call the network to which the called party had subscribed. Cellnet and Vodafone maintained that there was competitive pressure on termination charges. They recognized that this was only recently so, but said that a number of factors were increasingly contributing to such pressures.

1.5. We examined competition in call termination looking at, among other things, recent trends in charges, consumer price sensitivity, alternatives to fixed-to-mobile calls and the competitive pressure that may be exerted by mobile phone users who also have a direct interest in charges for incoming calls. We conclude that there is currently insufficient competitive constraint on termination charges.

1.6. We note, however, that mobile telecommunications is still a relatively immature service in the UK. The industry and the technology are evolving rapidly and new competitive pressures may emerge. The client base is growing in size and experience and it is possible that charges for incoming calls will assume greater competitive significance in future. In these circumstances we do not believe we have a sufficient basis to expect that competitive constraints on termination charges will remain inadequate beyond the next three or four years.

1.7. In the light of arguments put to us by the MNOs, the DGT and others we conclude, first, that in principle termination charges should be cost-oriented. Alternatives to a cost-based approach such as demand-led pricing, which was proposed to us, in our view provided neither a better nor a more practicable starting point for determining the public interest. However, many of the costs involved are fixed and common to outgoing and incoming calls and it was necessary therefore to determine an appropriate allocation of these costs across different types of call. We also allowed for a reasonable return on capital, which we concluded was 16.5 per cent.

1.8. Second, we conclude that only efficiently incurred costs should be taken into account in determining the public interest benchmark. We base our assessment of efficient costs on Vodafone's costs as overall these were substantially lower than those of Cellnet. We do, however, take account of the extent to which Cellnet's costs were unavoidably higher because of its currently lower volume of traffic and the significant effect which this has on unit costs.

1.9. Next, we considered whether there might be any public interest benefits in Cellnet's and Vodafone's termination charges being higher than was necessary to recover their efficiently incurred costs and an adequate return on capital. We conclude that this is not necessary either to ensure quality of service or efficient levels of investment. However, in view of the possibility that termination charges could become an element of competition in the future, we considered that there were advantages in charges being above Vodafone's costs. These are relatively low because of Vodafone's higher market share and economies of scale. We saw a risk that charges strictly reflecting Vodafone's costs could inhibit other MNOs from making termination charges a competitive issue, to the longer term detriment of consumers.

1.10. We resolve this problem by using as our public interest benchmark the efficiently incurred costs of an operator assuming it had 25 per cent of the current and anticipated market. With, currently, four MNOs and no new entrants being licensed to operate before 2002, this benchmark is achievable by any or indeed all of them. This benchmark figure we estimated as 12.15 pence per minute (ppm) for 1998/99 and 11.38 ppm for 1999/2000, dropping to 9.98 ppm in out-turn prices by 2001/02.

1.11. The charges introduced by Cellnet and Vodafone in August 1998 are 22 per cent above the current benchmark and 30 per cent above the benchmark for 1999/2000. We conclude that these charges operate against the public interest, and that they may be expected to operate against the public interest over the next three years.

1.12. After considering a variety of types of modifications to Cellnet's and Vodafone's licences we conclude that the only effective means of remedying or preventing the adverse effects would be to impose a price control on termination charges.

Unanswered and diverted calls

1.13. Both Cellnet and Vodafone charge for calls terminating on a recorded message, and charge for unanswered calls which are diverted to another phone from the time the diversion is announced.

1.14. We consider that these practices lead to callers incurring costs that they cannot predict or control and are therefore against the public interest. We considered that the adverse effects could be remedied or prevented by modifications to Cellnet's and Vodafone's licences preventing them from (a) charging for calls answered by recorded announcements and (b) charging for unanswered calls which are diverted, until they are answered. However, we allow for the costs incurred in terminating such calls to be charged to successful fixed-to-mobile calls, in parallel with the treatment of these costs in the fixed-line sector. This adds 0.32 ppm to the public interest benchmark, taking it to 11.7 ppm for 1999/2000.

Conclusion

1.15. Under our proposals, Cellnet and Vodafone would be required to reduce their weighted average termination charge for 1999/2000 to 11.7 ppm, reducing it by RPI-9 in 2000/01 and by RPI-9 again in 2001/02. Combined with our proposals in the report on BT's charges, this would reduce the average charge for a fixed-to-mobile call by around 25 per cent below the current average rate, and approximately 30 per cent below the rate applying when the DGT made the reference.

[Back to Contents](#)

2 Conclusions

Conclusions on the public interest

2.389. We were required by our terms of reference to investigate and report on three matters in respect of both Cellnet and Vodafone. The matters were whether the charges made by Cellnet and Vodafone respectively to operators of fixed public telecommunications systems:

(a) for the delivery of calls to handsets connected to their respective mobile public telecommunications systems;

(b) for unanswered calls to such handsets; and

(c) for the diversion of such unanswered calls

operate or may be expected to operate against the public interest.

Cellnet

2.390. As regards Cellnet, we conclude that the charges it makes to operators of fixed public telecommunications systems for the delivery of calls to handsets connected to its mobile public telecommunications system operate against the public interest and may be expected to do so until March 2002. The particular effects adverse to the public interest that those charges have, and may be expected to have, are that the charges are higher than the level:

(a) which is required by Cellnet to recover efficiently incurred costs together with a reasonable rate of return, and to finance the activities that it is licensed to carry out, and

(b) which would not deter competition,

contrary to the interests of consumers and other users of telecommunications services as regards price. The relevant level is set out in Table 2.2 for each of the years 1998/99 to 2001/02, described as the public interest benchmark.

TABLE 2.2 Comparison of future charges with public interest benchmark

	1998/99	1999/2000	2000/01	ppm 2001/02
RPI-6 reductions (ppm)	14.83	14.39	13.95	13.53
Public interest benchmark* (ppm)	12.15	11.38	10.66	9.98
Margin over public interest benchmark (%)	22	26	31	36

Source: MMC.

*ie efficiently incurred costs with a 25 per cent market share plus 16.5 per cent return.

2.391. We also conclude that the charges made by Cellnet for unanswered calls terminated on recorded announcements, and its charges for unanswered calls which are diverted, from the announcement of the

diversion, operate, and may be expected to operate, against the public interest. The particular effects adverse to the public interest are that the costs to callers are unpredictable and uncontrollable, contrary to the interests of such callers.

Vodafone

2.392. As regards Vodafone, we conclude that the charges it makes to operators of fixed public telecommunications systems for the delivery of calls to handsets connected to its mobile public telecommunications system operate against the public interest and may be expected to do so until March 2002. The particular effects adverse to the public interest that those charges have, and may be expected to have, are that the charges are higher than the level:

(a) which is required by Vodafone to recover efficiently incurred costs together with a reasonable rate of return, and to finance the activities that it is licensed to carry on, and

(b) which would not deter competition,

contrary to the interests of consumers and other users of telecommunications services as regards price. The required level is set out in Table 2.2 for each of the years 1998/99 to 2001/02, described as the public interest benchmark.

2.393. We also conclude that the charges made by Vodafone for unanswered calls terminated on recorded announcements, and its charges for unanswered calls which are diverted, from the announcement of the diversion, operate, and may be expected to operate, against the public interest. The particular effects adverse to the public interest are that the costs to callers are unpredictable and uncontrollable, contrary to the interests of such callers.

Licence modifications

Introduction

2.394. In view of the conclusions set out above, we are required to answer the question whether the adverse effects we have identified could be remedied or prevented by modifications to the licences granted to Cellnet and Vodafone.

2.395. The MNOs made a number of general comments about the approach we should adopt to licence modifications in the event of an adverse public interest finding. These are set out in Chapters 6, 7 and 9. In summary, the main points were: the objectives in regulating Cellnet and Vodafone should be closely defined and all options for achieving those objectives should be evaluated; the evaluation should take account of the longer-term interests of consumers as well as their short-term interest in lower prices; if the objective of regulation was to protect the public interest pending the development of effective competition, remedies should be designed to make the market more competitive; price controls should be the last resort and it would not be appropriate to propose them unless they were the only means of protecting the public interest; any licence modification should be set out in detail by the MMC and the

duration of any regulatory measure should be limited. But the MNOs also argued that there were legal constraints on the type of modifications that could be made by the DGT, and we deal with these first.

Interconnection Directive

2.396. Cellnet and Vodafone argued that, under the Interconnection Directive, the DGT was not permitted to impose price controls on either Cellnet or Vodafone. The DGT argued that the Directive did not preclude such action. We received from Cellnet, Vodafone, the DGT and One2One copies of legal advice they had each obtained, which was circulated among them, as were further advice and responses to arguments put by other parties. Appendix 2.1 summarizes the main arguments put on behalf of Cellnet, Vodafone, the DGT and One2One. We sought the views of the relevant services of the European Commission on the arguments put to us. The response is also set out in that appendix.

2.397. It was argued that, if the levels of charges had effects adverse to the public interest which could not lawfully be remedied or prevented by modifications of the conditions of the licences granted to Cellnet and Vodafone, we were obliged to answer 'no' to the second question in our terms of reference, ie whether the adverse findings could be remedied by modifications to the licences of Cellnet and Vodafone. We are advised that, in circumstances where we are satisfied that there are strong arguments that the proposed action is lawful, we are not required to attempt to reach a definitive view on these legal issues, but may proceed on the assumption that the DGT can validly make modifications to introduce price controls as argued by him; and we note that the DGT is the national regulatory authority under the Directive and is directly obliged by EC law to comply with the Directive, regardless of our conclusions. For the reasons given in the following paragraph, we have concluded that there are strong arguments that that action is lawful. For the same reasons, if we were required to determine the issue we would determine it in favour of the DGT.

2.398. We accept that the imposition of price controls on Cellnet and Vodafone is not required by the Directive. However, article 9.3 provides that, in pursuance of the aims stated in article 9.1, national regulatory authorities may intervene on their own initiative at any time in order to lay down specific conditions to be observed by one or more parties to an interconnection agreement. It goes on to say that in exceptional cases authorities may intervene to require changes to be made to interconnection agreements already concluded where justified to ensure effective competition and/or interoperability of services for users. We are advised that the term 'at any time' in the first sentence of article 9.3 indicates that conditions may be imposed after an agreement has been concluded, and that the imposition of conditions to be observed is distinct from actually requiring terms of an existing agreement to be changed. We note that this advice is consistent with the views of the European Commission services, set out in Appendix 2.1. It is our view that the imposition of price controls on Cellnet and Vodafone would be pursuant to aims referred to in article 9.1—promoting maximum economic efficiency and giving the maximum benefit to end-users.

Termination charges

Views

2.399. We now turn to consider possible licence modifications in respect of termination charges. The DGT said that the adverse effects were capable of being remedied by licence modifications. The modifications specified by way of remedy should be such as would provide that: (a) termination charges be cost-orientated; (b) the costing methodology be LRIC; (c) the charge be set initially at 10.6 ppm

(all-calls figure) pending determination of LRIC figures; (d) the charges be subject to an RPI-X formula such that the charges fell to the LRIC level over a four-year control period and the operators passed on the benefits of falling unit costs caused by greater call volumes and increased efficiency (thereby avoiding the need for further regulatory intervention over the control period); and (e) the termination charges of both Cellnet and Vodafone should be the same so that the charges for both of them were determined according to the costs of the more efficient.

2.400. Against this, the MNOs argued that there were clear disadvantages to introducing a price control. Cellnet saw the prospect of regulation as not only unnecessary but also very counter-productive and potentially damaging to the industry's development. It said that regulation was recognized to be a poor substitute for competition and that this would particularly be the case in a dynamic and innovative industry such as the mobile industry, where prices were already falling rapidly as a result of intense competition. Detailed regulatory intervention would act as a brake on competition and innovation. This would be contrary to the objectives of section 3 of the 1984 Act.

2.401. A paper commissioned by Cellnet on price cap regulation covered some of the broader policy considerations and included the following main points:

- (a) price cap regulation had generally been used for controlling monopolies or near monopolies, and had been introduced when these were being privatized or the market in question was being liberalized;
- (b) there were no apparent examples of price cap regulation being applied to businesses in their start-up phase;
- (c) there were no apparent examples of price cap regulation being applied in an industry with four effective competitors, strong market growth and deep price reductions; and
- (d) the mobile industry did not share any of the critical characteristics of a regulated utility.

2.402. In Cellnet's view, public policy considerations and past practice indicated that it would not be appropriate to seek to regulate Cellnet's termination charges.

2.403. Vodafone said that systematic price regulation of fixed-to-mobile call charges would be wholly inconsistent with the regulatory framework of EC and UK law which favoured competition as the foremost means of promoting the public interest and envisaged systematic price controls only as a last resort. The market was in a state of rapid evolution, in which competition would intensify further. There was a serious risk that regulation of termination charges would significantly restrict competition in respect of other network services, including call origination, and would stifle investment and innovation at a time when major investment and technological change were set to continue. Regulated prices for fixed-to-mobile calls would pre-emptively determine the nature of market outcomes and destroy the potential for the development of further competition.

2.404. Vodafone said that the inquiry raised monopoly-type issues, if it raised issues at all. In such a case, the MMC would generally think first in terms of remedies directed at making the market more competitive; only if these could not be made to work would the MMC consider price controls. It was

neither right in principle, nor an appropriate use of the DGT's regulatory powers, for the MMC to propose price controls to regulate Vodafone's termination charges unless that was the only means of protecting the public interest and the proposed price controls did not inhibit the development of competition in the setting of termination charges.

2.405. One2One argued that a cost-based regulatory regime would be inconsistent with the DGT's stated aims of a lighter touch and less interventionist regulation and would prevent the move towards more competitive markets. Regulation of inbound termination charges was neither necessary nor appropriate. Securicor, the holder of 40 per cent of the shares in CGL, said that encouragement of competition, not price regulation, was what was needed. Price regulation would interfere in the existing competitive dynamics of the market.

2.406. Orange said that in a competitive market such as this the goal should be to minimize regulation.

Alternatives to price control

2.407.. We note that it is an objective of the Interconnection Directive that interconnection in an open and competitive environment should be encouraged. As indicated above, we cannot rule out the possibility that competitive pressures on these charges would develop. In considering whether modifications to Cellnet's and Vodafone's licences would remedy or prevent the adverse effect we have identified, we believe we should avoid, as far as possible, measures that could deter or prevent competition. In the light of this and the arguments put to us by the MNOs, we considered whether there was any satisfactory alternative to the imposition of a price control.

2.408. We asked all four MNOs and the DGT whether, in the event that Cellnet's or Vodafone's termination charges were found to be against the public interest, there were alternatives to some form of price control to remedy the situation.

2.409. Vodafone submitted that, while it was unlikely that any single step that the MMC might recommend would be sufficient on its own quickly to stimulate more intense competition in respect of call termination charges, it could envisage a package of measures which, taken together, would be sufficient to stimulate fully effective competition. Vodafone's suggestions as to possible components of such a package are described in paragraph 7.57. In summary, it suggested seven measures, a combination of some of which it considered would be sufficient.

2.410. First, the mobile networks could be placed under an obligation to publicize calls-to-mobile prices, by reference either to BT's retail price or to a range of prices charged by different retailers. In addition BT could be under an obligation to publicize its prices more effectively. The introduction of MNP could be deferred until it could be introduced on terms that did not necessitate the charging of uniform call termination charges. Alternatively, it could be introduced as planned with harmonized termination charges but on the basis that the industry would, as soon as practicable, adopt a better solution to allow competition on rates. If necessary, retail margins for calls-to-mobiles could be regulated to ensure that differences in termination charges were reflected in retail charges. MNOs could be obliged to allow consumers to terminate their contracts after a specified term shorter than the 12-month minimum currently required, allowing more freedom for subscribers to switch networks. To encourage subscribers to the mobile networks to take incoming call charges into account, a licence modification could require MNOs to offer 'price redistribution products' in which mobile phone users bore all or part of the mobile termination charge. Finally, as a more radical step, MNOs could be required to recover, say, 15 per cent

of the termination charge for each incoming call from their own subscribers.

2.411. Cellnet told us that increasing the transparency of incoming call charges had significant advantages over price regulation since it avoided most of the concerns it had raised in relation to price regulation, not least the impact of the Interconnection Directive. Cellnet believed that many of the concerns raised by the DGT and others about fixed-to-mobile calls charges related to customer knowledge about them rather than to the actual level of the charges. Increased transparency would require details of the charges to be communicated to BT customers and other FNOs' customers making fixed-to-mobile calls. This might be achieved in a focused way through the co-operation of these other FNOs.

2.412. One2One suggested that if charges were found to be too high, BT's retail margin should be regulated and that BT should be required to publicize mobile phone number prefixes and the retail rates applicable to them. It also made an alternative regulatory proposal which involved the regulation of BT's retention to encourage it to be volume rather than margin driven; a requirement on BT to publicize pricing information in relation to mobile number prefixes and an intelligent network (IN) approach to MNP in which BT would be required to route calls to ported numbers using the network with the lowest termination charges.

2.413. Orange said that while price control remedies were the most obvious remedies to deal with termination charges which had been found to be operating against the public interest, there were significant problems in any specific formulation. It therefore considered that the only two effective remedies that should be considered were measures to oblige FNOs to make the price of fixed-to-mobile calls more transparent and the regulation of BT's retention so that differences in termination charges were fully reflected in retail charges. Although Orange did not agree with the least-cost routing approach suggested by One2One it suggested that an IN solution to MNP should be adopted in which the FNO charged the correct rate for the network to which the number had been ported. This would require investment, but a financial incentive to make the required investment could be achieved if FNOs were required to bear all conveyance costs in forwarding calls to ported customers.

2.414. We do not believe we could rely on either One2One's or Orange's proposals regarding MNP. With regard to the proposal for an IN solution, such a system is not currently available and, in our view, would take too long to implement to deal with the adverse effects we have identified. It would probably only be commercially sound for BT to bear the costs of an IN solution if it were used to support a much broader range of telecommunications services. BT said that it had no current plans to introduce IN, and the DGT also regarded it as unlikely in the near future. Moreover, while there may, in One2One's proposal, be some incentive for MNOs to reduce termination charges in order to obtain a higher market share of ported calls, this would be likely to be offset by the advantage of maintaining termination charges for non-porting calls, which for the period to 2001/02 are likely to be the main source of termination revenue.

2.415. The other alternatives to price controls fall into three categories: greater transparency, regulation of BT's retention and proposals aimed at making network switching easier. We look at each of these in turn.

2.416. Given the rather limited awareness of retail charges for fixed-to-mobile calls (see paragraphs 2.107 to 2.110) there is little doubt that requiring Cellnet and Vodafone to give greater publicity for such charges would be helpful. We do not however regard this as likely to bring significant pressure to bear on

mobile termination charges, so as to reduce them to the public interest benchmark we have identified. Greater knowledge on the part of callers to mobiles of the overall cost of the call does not seem likely to create any great incentive for MNOs to reduce termination charges. It might help stimulate greater competition between FNOs to attract new customers through emphasis on lower charges for fixed-to-mobile calls, but we do not see this as having a significant impact on termination charges.

2.417. Greater knowledge of retail charges for incoming calls on the part of mobile phone subscribers might also help but again to only a very limited extent. Most subscribers and potential subscribers would still be likely to regard the price of incoming calls as a relatively low priority. There is also the practical difficulty that an MNO would have to make information available not only on BT's retail charges for calling that network at different times of the week but also on the charges of BT's competitors. A licence modification requiring MNOs to publish the retail rates of all operators, which would require constant monitoring and updating, is not, in our view, defensible.

2.418. Publication of termination charges would not raise the same problems. It would also bring differences between the networks' termination charges into sharp focus. But this raises other problems. There would be considerable scope for customer confusion because callers to mobiles would pay a charge different from, and noticeably higher than, the termination charges to which attention had been drawn. Moreover, even if BT applied the same retention to all MNOs, different FNOs might charge different amounts to call a network which had publicized a given termination charge.

2.419. We do see value in service providers, retailers of handsets, and others who arrange mobile telephone contracts giving greater prominence to MNOs' termination charges, and believe it would be sensible for the DGT to discuss with the MNOs how best to focus more attention on their termination charges when marketing mobile phones. But there would need to be some way of emphasizing that these figures were not what callers would actually pay; and in any event we do not see this as a realistic means of ensuring that termination charges fall to the benchmark we have identified. We note, in passing, that there might also be merit in the DGT working with BT to improve the layout of its bills.

2.420. The second approach was to regulate BT's retention. Whether BT's retention is itself at a level which is against the public interest is the subject of a separate reference and is not discussed here. What One2One and Orange were suggesting was a restriction on BT's retention as a remedy for excessive termination charges.

2.421. We are required by our terms of reference to report on whether the adverse effects we have identified can be remedied or prevented by modifications to Cellnet's and Vodafone's licences, not by modifications to BT's licence. But even if we were free to propose modifications to BT's licence it appears to us very unlikely that regulation of BT's retention would remedy the adverse effects deriving from Cellnet's and Vodafone's termination charges. There is no reason why a reduced retention on the part of BT would have any direct effect on mobile termination charges at all.

2.422. There might be some indirect effects. With a capped retention the only way for FNOs to increase their revenues from calls-to-mobiles would be through increased volumes, and that might lead them to put more downward pressure on the MNOs' termination charges. But what evidence we have seen suggests only limited price sensitivity for fixed-to-mobile calls, and MNOs would be in a robust position to resist most if not all of such pressure. And, as we have noted in paragraph 2.160, any such incentive might, in some circumstances, be attenuated by the financial linkages between the two main FNOs and two of the four MNOs.

2.423. The third set of proposals were aimed at increasing competition between the mobile networks, including modification or delay in the introduction of MNP in order to avoid harmonization of charges; requirements designed to allow subscribers to terminate their contracts earlier than at present; and placing the burden of at least part of the cost of incoming calls on subscribers, to ensure that they do take these charges into account when choosing a mobile network.

2.424. The opportunity to terminate a contract more quickly might well increase the general level of competition in the mobile phone market. But we see no reason why this would be expected to create sufficient competitive pressure on termination charges for fixed-to-mobile calls given the relatively low priority attached to charges for inbound calls.

2.425. Charging subscribers for some of the cost of incoming calls is likely to have a bigger impact. If, however, the contribution from subscribers were relatively small, then incoming call charges would be likely to remain a relatively low priority. If the contribution were large, or if a called-party-pays system were introduced, then this would be likely to lead to substantial switching off of mobiles as we understand has been a problem in the USA, with substantial detriment to the utility which consumers obtain from mobile telephony and possibly to subscriber growth. There was, in this connection, very little enthusiasm on the part of those who gave evidence, for a move towards called-party-pays, and there appears little to commend it in terms of efficient resource allocation.

2.426. We do accept that harmonization of charges would inhibit and almost certainly prevent the emergence of competition for termination charges for fixed-to-mobile calls. The ramifications of this we examine below (paragraphs 2.449 to 2.452). But we do not see the absence of harmonization, for whatever reason, as being sufficient to generate the sort of competitive pressure necessary to bring termination charges into line with our public interest benchmark.

2.427. We conclude that, although an array of alternatives to price controls have been put to us by the MNOs, we do not think any of them properly address the central issue that termination charges are not subject to adequate competitive pressure, are too high and are not likely to be driven down to an acceptable level unless and until the MNOs face clear and powerful incentives to reduce them. Even taking all these proposals together, we see no reason to think they would provide an adequate remedy, given the very limited role, if any, which each of them could play individually. We therefore turn to price controls as the only remedy likely to address the adverse effects we have identified.

Options for price control

2.428.. We put to Cellnet, Vodafone, the DGT, BT, Orange and One2One various possible forms which a price control might take. All our proposals included an initial reduction in termination charges, followed by a control on changes in them over the ensuing three years. The main variations related to whether the control related to the average weighted termination charges or to the actual termination charges set for different periods of the day and week; and whether subsequent changes in regulated charges should be controlled by an RPI-X formula which linked the permitted changes to movements in the RPI, or by reference to the trend in an index of average charges for outbound calls. In practice the issue of how to regulate termination charges is closely linked to the way in which retail charges are set by FNOs.

Views

2.429. Vodafone considered that there was no real prospect that the MMC would be able successfully to devise a cost-reflective initial price, for inclusion in a price control, which would be calculated to serve the public interest better than present prices. If there was to be a price control, the MMC should therefore be looking to set the initial price by reference to a benchmark—ie a price charged for a similar or equivalent service in a market where prices were competitively determined. The best benchmark would be based on Vodafone's present private wires charge, or on its call origination charge.

2.430. Vodafone said that it saw real difficulties in principle in subjecting call termination either to a simple time-of-day/day-of-week price control or to a maximum weighted average termination charge. There was no uniform call termination service for the MMC to price: call termination was capable of being a differentiated product and of being offered on contract terms which caused the service offered to different interconnected operators to be different in value and quality.

2.431. It would be important that remedies intended to prevent exploitative or abusive pricing pending the development of full competition should not frustrate, or impede, the development of such competition. Vodafone considered that the price control should therefore act as a back-stop whilst allowing companies to compete by setting prices below the price cap if they could afford (and chose) to do so. If all four MNOs were subjected to the same price control, and it was set at too low a level (for example, the estimated costs of the lowest-cost operator), then they would, in practice, be obliged to set their termination charges at the maximum permitted level and would not be able to afford to compete below the cap.

2.432. If separate price caps were set for each MNO, with each being capped at its own estimated costs, then the price control would, in practice, weigh more heavily on the MNO subjected to the lowest price cap, as it would not be allowed the pricing flexibility which the other MNOs enjoyed to set their termination charges below the price cap level and that would give those MNOs a competitive advantage. Over time, each MNO would come under pressure to model its network on the notional network by reference to which its price control was set (for example, as to capacity, traffic pattern etc). This meant that regulation of termination charges would 'infect' competition in outbound charges and would frustrate the policy of network competition which was intended to enable qualitatively different networks to offer differentiated services.

2.433. In addition, the proposal for a time-of-day/day-of-week price control (but not the proposal for a capped weighted average termination charge) could produce further effects which Vodafone considered would operate against the public interest. In particular, if the price control set separate price caps for specified different periods of the day/days of the week, then it would constrain the way in which any MNO could manage its traffic load. This might lead to a misallocation of resources (ever more traffic at peak times necessitating installation of extra capacity), and might expose the MNO to risk that its peak would shift, with the MNO unable to reflect that in a newly balanced pricing package. If all four MNOs were required to set their prices based on the same division of the day/week into different pricing bands, then the price control would have the effect of eliminating one degree of flexibility in meeting different consumer demands: different MNOs would not be able to offer differently-specified packages of peak and off-peak pricing. It would be difficult to know whose traffic pattern to use to identify the peak and off-peak periods to be embodied in such a price control. If Vodafone's traffic pattern were to be used, then the price control would not be, in any real sense, cost reflective as regards the other MNOs' costs. If a weighted average derived from all four MNOs' traffic patterns were to be used, then the result would

not be cost reflective of any MNO's costs. Finally, if all four MNOs were subjected to a single price control, based on a single traffic pattern, that would, over time, be likely to cause all four networks to converge on the notional model, thereby diminishing network differentiation and choice, not only in respect of interconnection, but also in respect of outgoing call products.

2.434 As regards annual adjustments after the first year of price control, Vodafone considered that, unless a control lasting more than one or two years were envisaged, it would be preferable to apply a simple RPI-X adjustment: this would be more straightforward than a continuing linkage with outbound call prices, and would avoid the risk that the linkage could be distorted where MNOs offered discounts on a total price package without overtly reducing outbound prices. In deciding on an appropriate X factor, the MMC should look at trends in total costs, not merely costs attributed to incoming calls.

2.435. Cellnet said that the setting of initial prices in any regulated business was extremely complex. Mobile telephony raised a series of issues without parallel in other regulated industries:

There were choices of architecture facing an MNO. The choice made by an operator would be dictated by its view of how the market might develop, how it would wish to position itself within the market, how it would roll out its programme and how it thought it might deal with future increases in volumes and with improved quality issues. In regulated utilities the need to take account of specific company issues as well as efficient operation had been recognized. Therefore, the initial specified level should be reflective of the architecture which a particular operator had chosen to use.

(a) It would be completely unreasonable to use the traffic of one operator to determine the unit costs of others.

(b) In principle this led to the view that any initial allowable price ceiling would have to be different, not only as between Cellnet and Vodafone on the one hand and Orange and One2One on the other, but between each MNO. However, that would be in direct opposition to the DGT's desire for harmonization at a single rate which the DGT presumed was needed in order for MNP to work. Even if regulation involved a price ceiling but no price floor, diverse rates would converge towards those of the operator with the tightest price cap, causing difficulty for higher-cost operators. It might even lead to a view that the DGT had not complied with his primary duty under section 3 of the 1984 Act to ensure that any person providing services was able to finance their provision.

(c) All this suggested that any ceiling would need to be the same for all operators and set at a level that would not damage the financial health of any operator. There should be no floor.

(d) Detailed regulation down to specific time-of-day rates based on average traffic flows would be impracticable and manifestly unfair. This would be an extremely intrusive form of regulation and would, in essence, mean that the DGT would be running Cellnet's business. If, however, regulation were limited to the weighted average termination charge the industry would at least have some flexibility in managing its operations efficiently and some ability to manage capacity, to react to changes in traffic patterns and to initiatives by competitors.

2.436. In principle, Cellnet believed that regulation of termination charges indexed to outgoing charges, which, in its view, were determined by a fully competitive market, might be more appropriate than an RPI-X formula. Cellnet said that it did not underestimate the difficulties in working out the precise form such regulation might take, including: whether the average charges for outgoing calls would be Cellnet charges, or an industry average (which Cellnet favoured); what would be included in the average charge; what would be done about bundled minutes; and how often the price index tracked by incoming call charges would be recalculated. Nevertheless such a 'price tracker' (see Appendix 6.1) had the merit that it would mirror, and adjust to, outbound sector developments and would cause least distortion to the competitive structure of the industry.

2.437. Whilst an RPI-X formula had the attraction of simplicity, Cellnet had grave concerns about how it would operate in practice in an industry as unpredictable and as fast-moving as mobile telecommunications.

2.438. The DGT considered that imposing an initial price cut on termination charges, followed by an annual adjustment made according to the indexed trend of average charges for outbound calls, could have merit if the mobile call origination market were fully competitive. However, the DGT did not presently consider this to be the case (although it might nevertheless be that little could be done materially to improve the situation). In these circumstances there was a danger that, rather than bringing inbound call prices down to the competitive level, such an index linkage would, on the contrary, serve to slow the decline of outbound call prices. In addition, identifying the average cost of an outbound call would pose particular practical problems.

2.439. The DGT acknowledged that RPI-X type of indexation entailed problems in forecasting future costs but commented that these were akin to the problems he had had to face in implementing the BT retail price control. These were manageable problems, in the sense that it was possible to arrive at a reasonable forecast. It was partly for this reason that the DGT favoured limiting the duration of the price control on termination charges to three or four years, the latter being the standard period for a telecommunications price control.

2.440 The DGT took the view that the private wire tariff gave little indication of the costs of terminating inbound calls because of its inseparable relationship with the prices of the other services sold under that tariff. The private wire tariff for inbound calls did not necessarily give any useful information on what a competitive price for inbound calls would be. Private wire services were probably part of a competitively determined set of prices, but it would not seem to be appropriate to use the price charged for a single element of service under the private wire tariff as a benchmark to judge what termination charges might be in a fully competitive market.

2.441. One2One said that any cost benchmark needed to take account of the position of the actual company concerned, ie it should not apply a model based on the costs of Cellnet and Vodafone to One2One. Any regulatory regime, if based on RPI-X, would have to address the time-of-day grading issue, otherwise One2One would be continuously disadvantaged against Cellnet and Vodafone.

2.442. Orange said that it would be undesirable to apply a rigid RPI-X type control to MNOs' termination charges or to make controls time-of-day specific as this would be overly prescriptive and would further stifle innovation.

2.443. BT supported the principle of allowing maximum flexibility to avoid ossification of existing tariff

structures and to allow prices to be set taking into account market conditions, including the need for communicable price points. It said that if uniform retail prices were required, the only practical option was for the MMC to dictate termination rates for each time period based on an average time-of-day mix. If uniform retail prices were not required, then BT could be left to negotiate time-of-day termination charges for each operator based on their own time-of-day mix, subject to 24-hour average rates set by the MMC. In either case, having established uniform starting termination rates by time of day, it might then be feasible to leave BT to agree the time-of-day breakdown of any specified RPI-X changes with the operators (to be based on the average time-of-day mix) with the fallback that a uniform percentage cut should be applied in all time periods if agreement could not be reached. This would allow some flexibility to achieve communicable price points and avoided the otherwise inevitable ossification of the time-of-day tariff structure.

Assessment

2.444. Some of the concerns expressed about a possible price control are relevant to our judgment as to the public interest and we have considered them before arriving at our conclusion that Cellnet's and Vodafone's termination charges operate against the public interest. In particular, we have considered differences between Cellnet and Vodafone in terms of network architecture and design (paragraph 2.304) and we have sought to quantify whether their products are likely to be sufficiently differentiated to command different prices in a competitive market (paragraphs 2.305 to 2.308). We have also allowed for the fact that Vodafone carries a higher volume of traffic than Cellnet and benefits from greater economies of scale (paragraph 2.311). Finally, we have taken into account the state of evolution of the mobile phones industry and the risk that, in current circumstances, charges reflecting the efficiently incurred costs of carrying Vodafone's level of traffic may inhibit the development of competition on termination charges in the future (paragraphs 2.323 to 2.331).

(a) Initial level

2.445 In considering the initial level at which a price control should be set, we therefore consider first and foremost what is needed to remedy the adverse effects we have identified.

2.446 Vodafone's suggestion that a price control should be linked to charges to private wire customers rests, in part, on its view that these charges are competitively determined. However, as Orange has submitted to us (see paragraph 9.48), the economics of private wires are very different, as far as users are concerned, from the economics of call termination in general and comparison of the two services could be misleading. Private wires are also the basis of a package of services in which there is scope for a trade-off between termination charges and 'other' charges. Moreover, Vodafone's own private wire charge for call termination was no lower than the general termination rate it introduced in August 1998 (see paragraph 4.48). In the circumstances we consider that a price control linked to private wire charges would have an unpredictable effect on termination charges in general and certainly could not be relied upon to remedy the adverse effects we have identified.

2.447 A price control based on the level and trend of charges to subscribers could have an equally unpredictable and unsatisfactory outcome. The costs of call termination are clearly not the same as the costs of supplying mobile phone packages. Moreover the bundling of outgoing call charges and subscriptions would make it difficult to establish any consistent relationship between the two sets of

charges. Cellnet submitted that a price control should maintain the existing relationship between termination charges and average net revenues from subscribers but this would merely maintain the status quo and would not remedy the adverse effects arising from existing charges. Nor are we convinced that the linkage of termination charges to future trends in outgoing call charges would ensure an adequate level of control over future termination charges. Although outgoing call charges are subject to a degree of competition, it is by no means certain that this would be sufficient to ensure that those charges would decline to the extent necessary or sufficiently fast to remedy the adverse effects that we expect to arise over the next three years. In addition there might well be scope to maintain higher termination charges by concentrating price cuts to subscribers on handset charges or subscriptions. We do not therefore consider that a price control linking termination charges either to outgoing call charges or average net revenues from subscribers could be relied upon to remedy the adverse effects that we have identified.

2.448. In the circumstances, we consider that, in order to remedy the adverse effects we have identified it will be necessary to introduce modifications into the licences of Cellnet and Vodafone, setting down specific levels above which their termination charges must not rise. We consider that we should take as our starting point for the price control, the benchmark that we established for the purposes of our public interest judgment (see paragraphs 2.390 and 2.392 and Table 2.2). However, before specifying the levels, we need to take a view on a number of matters concerning the scope of the price control and on the implications for the control of our finding in relation to unanswered and diverted calls.

(b) Harmonization of prices

2.449. The first matter is whether the price control should set a price floor as well as a price ceiling. We have considered this carefully in the light of the DGT's concerns that consumers may be adversely affected if termination charges differ as between the different mobile networks after the introduction of MNP (see paragraph 2.29). The DGT proposed that each FNO should make a uniform retail charge for call termination on mobile networks but, as he has rightly pointed out, differences between the mobile networks' termination charges would be of little benefit to consumers or competition if they were not reflected in retail charges.

2.450. In the absence of any prospect that termination charges could become subject to effective competition, the DGT's view that consumers should be protected from uncertainty and confusion by the introduction of uniform rates would have considerable force. However, our own view is that there is at least a possibility that termination charges could become subject to further competition in the future. Although we do not consider that competitive pressures would develop sufficiently to constrain termination charges within the next three years, we consider it important that Cellnet and Vodafone should not be prevented from undercutting each other's termination charges if they believe that such charges are becoming a factor of competition.

2.451. The present industry proposal for implementing MNP envisages that those making calls to ported numbers should be charged the termination rate applicable to the network from which the number had been ported. We recognize that, as far as ported numbers are concerned, this would eliminate the competitive effect of differential termination charges. However, we believe that calls to ported numbers would remain a minority of all fixed-to-mobile calls over the period of the price control. The possibility for Cellnet or Vodafone to offer lower termination charges to the generality of callers and to potential new subscribers to their networks would remain of considerable value in terms of the possible development of competition. Moreover, it is clear that there is an ongoing debate in the industry about the best technical means of implementing MNP and we believe that we should allow for the possibility

that systems would be devised which would allow fixed-to-mobile callers to benefit from any lower termination charges offered by the network to which a number has been ported.

2.452. On balance therefore we believe that the potential longer-term benefits to consumers of ensuring that Cellnet and Vodafone are free to compete on termination charges outweigh the risk of a lack of certainty and transparency in the short term. Clearly this would not be the case unless any differences in Cellnet's and Vodafone's termination rates were reflected in retail charges. BT told us that it was committed to passing on any reduction in the termination rate into the retail price. This is an issue that we address further in our report on BT's charges (see paragraphs 2.151 to 2.156 of the BT report).

(c) Control on average charges or individual rates

2.453. We also need to consider whether the price control should apply to Cellnet's and Vodafone's average charges or to individual rates for different times of the day or week. The DGT proposed that, to achieve uniform charges, the price control should apply to individual rates calculated from the average overall charge using the average traffic profile of all four MNOs. He told us that, if Cellnet and Vodafone were given more flexibility to adjust individual rates within an overall ceiling, he would be concerned that there could be a multiplicity of rates that reduced transparency and certainty for consumers without offering any real benefits in terms of material overall price reductions. He believed that there should be at the very least some form of ceiling on the individual rates that could be charged.

2.454. Cellnet and Vodafone currently have very similar traffic profiles and identical individual rates of charge. If that were likely to remain the position throughout the period of the price control, there would be little to be lost from capping the two operators' individual rates at the same level in the interests of clarity and simplicity. However, we are concerned that a common control on individual rates would unduly restrict the freedom of Cellnet and Vodafone to adapt their charging profiles in order to respond to changing customer and traffic profiles or to introduce competitive rates in particular periods of the day or week.

2.455. In our view it would be unsafe to assume that the traffic and customer profiles of Cellnet's and Vodafone's networks would remain unchanged for the duration of the price control. The introduction of MNP and the development of demand from residential users suggest that some change is entirely possible. If Cellnet and Vodafone wish to adapt individual rates to any such change, or indeed use their charges to stimulate such a change in order to make more efficient use of their networks, we believe they should be free to do so provided that the average of the individual termination rates for particular times of the day and week, weighted according to the previous year's traffic profile, does not exceed the overall level of the price control.

2.456. Table 2.3 shows the individual rates currently charged by Cellnet and Vodafone and gives an indication of the flexibility that would be allowed within a weighted average charge of 11.38 ppm.

TABLE 2.3 Illustration of individual termination rate options: Cellnet and Vodafone

	Day	Evening	Weekend
Current charges			
Cellnet (ppm)	17.55	12.26	5.34
Vodafone (ppm)	17.50	12.20	5.30
11.38 ppm weighted average			
Option I	12.78	9.10	4.00
Option II	14.00	4.59	3.60
Option III	11.38	11.38	11.38

Source: MMC.

Text Omitted

More extreme variations are possible but these could have major implications for the traffic flows, capacity and efficiency of a network. The maximum daytime charge, if evening and weekend calls were free, would be 15.59 ppm.

2.457. We have considered whether there should be a ceiling on individual rates as suggested by the DGT. However, we have received no evidence that tariff profiles, as distinct from the overall level of charges, have in the past operated against the interests of consumers and we have no firm reason to believe that this would happen in the future. Although, as Table 2.3 shows, compliance with a weighted average charge allows scope for increases in individual charges, the rebalancing of tariffs between different periods of the day or week would have to be extreme for these increases to be of significance. Unless they were a response to real shifts in traffic or customer profiles, such major changes could result in the less efficient use of network capacity and we believe that, in such circumstances, Cellnet or Vodafone are unlikely to consider them to be worthwhile. We therefore take the view that the small risk of undue manipulation of individual rates would be outweighed by the benefits of giving Cellnet and Vodafone maximum freedom to shape their tariff profiles so as to make the most efficient use of their networks. Before deciding what the initial level for the weighted average should be, it is necessary to consider unanswered and diverted calls.

Unanswered and diverted calls

2.458. We are also required to report on whether the adverse effects deriving from the charges made by Cellnet and Vodafone to operators of fixed public telecommunications systems for unanswered calls and for the diversion of unanswered calls could be remedied or prevented by modifications to the licences of Cellnet and Vodafone, respectively. In each case the adverse effects are that (a) charges for unanswered calls terminated on a recorded announcement and (b) charges from the announcement of diversion for unanswered calls which are diverted, are unpredictable and uncontrollable by callers, contrary to the interests of such callers.

Views

2.459. The DGT argued that the licences should be modified to prevent Cellnet and Vodafone making any charge in respect of unanswered calls, including calls answered by a recorded announcement or for diverted calls before they were answered.

2.460. During the course of our inquiry Cellnet told us that it was proposing to adjust its charging practices in respect of diverted and unanswered calls. In the future it would only charge for diverted calls from the moment when they were answered. It was making arrangements for the necessary changes to be implemented as from 1 January 1999. Cellnet remained of the view that imposing a termination charge for a call terminated by a recorded announcement was appropriate. However, it was in principle prepared to cease charging for calls terminating on recorded announcements. In the event that the MMC found that its termination charges did not operate against the public interest, it was planning to cease charging directly for calls terminating on a recorded announcement. It said that it would be able to implement this change shortly after publication of the MMC's report.

2.461. Cellnet did not, therefore, believe that it would be appropriate for there to be a modification to its licence prohibiting it from charging for unsuccessful calls. However, it considered that if the MMC were to recommend licence modifications regulating the level of Cellnet's termination charges, one of the matters that should be taken into account in establishing the initial specified level for the regulated termination rate would be Cellnet's lost revenue if there were also to be a prohibition on explicit charging for unsuccessful calls. Cellnet took the view that this lost revenue should be recovered across all successful incoming calls. It strongly believed that any attempt to allocate the costs across both incoming and outgoing calls would not only be inappropriate but also arbitrary.

2.462. Vodafone said that it had already agreed prior to the reference to alter the relevant charging arrangements for unanswered and diverted calls in line with the DGT's intentions. Vodafone would agree with BT and other interconnected operators that charges for calls to network recorded announcements would be discontinued once the DGT's investigation into mobile phones was complete. Vodafone would need to recover the costs incurred in carrying unsuccessful inbound calls from successful inbound calls. Any price control remedy for termination charges would need to be adjusted accordingly.

2.463. If it were necessary to introduce a licence modification to give effect to Vodafone's agreement to operate the DGT's policy for unanswered and diverted calls, Vodafone would be content with that.

2.464. BT said it had already given a commitment that, if mobile networks made the change allowing BT to distinguish between unanswered calls and others (which would mean that MNOs ceased to receive payment for the former), BT would cease to charge for unanswered fixed-to-mobile calls. Orange and One2One said that charging for unanswered calls should not be regulated.

Alternatives to prohibition

2.465. We considered whether there might be some means by which charges for unanswered calls could be made more predictable; or could be avoided by callers if they so chose. However, the scope for cost-effective action of that kind seems limited.

2.466. In the case of calls terminated by recorded announcements, a free prior announcement that a charge would be made for an unanswered call would be intrusive if made on all call attempts while not helping the caller to predict the outcome of the call or to make a more rational decision as to whether it is

worth proceeding with the call. Free announcements that a call had not been answered would be, in effect, a policy of not charging for these calls at all.

2.467. As to diverted calls, a free announcement warning of the diversion but with charging commencing only when the caller had had the opportunity to decide not to proceed with the call, may be of some value to the caller. But here too the essential problem that charges would be levied for the unpredictable period during which the call remained unanswered would not be resolved. We are not therefore convinced that the cost of requiring an announcement or charging practice of this kind would be proportional to the benefits.

Conclusion on licence modification for unanswered and diverted calls

2.468. We therefore take the view that no charges should be made by Cellnet and Vodafone (a) for calls terminated on recorded announcements or (b) for unanswered calls which are diverted, before such calls are answered. Cellnet argued that, if this were to be our conclusion, no licence amendment would be necessary, given its assurances about ceasing to charge for such calls. We do not in any way doubt the validity of those assurances, but for reasons similar to those given in paragraph 2.387 we do not believe that we should rely on assurances to remedy the adverse effects we have identified.

2.469. We conclude that the adverse effects specified in paragraphs 2.391 and 2.393 could be remedied or prevented by modification to the conditions of the licences of Cellnet and Vodafone. The modifications by which those adverse effects could be remedied or prevented are, for both Cellnet and Vodafone, such as to ensure that no such charges may be made for (a) calls terminated on recorded announcements; or (b) unanswered calls which are diverted, before such calls are answered.

2.470. This leaves the question of how the costs of such unanswered and diverted calls should be recovered. As we indicated in paragraphs 2.383 and 2.384, there is no obviously correct answer as to how these costs should be recovered. On balance we think that both the cost of calls answered by recorded announcements and the cost of diverted calls from the point of announcement should be recovered from successful callers in accordance with the practice for fixed-line calls.

2.471. This conclusion does not entail any additional licence modifications. It does, however, require that the regulated termination charges for calls-to-mobiles incorporate an allowance for these costs. Cellnet and Vodafone have provided us with different estimates of the costs incurred. However, there are a number of uncertainties surrounding these estimates. First, Cellnet's estimate assumes that calls terminated on recorded announcements would invariably last for the duration of the announcement. This seems highly unlikely and to that extent the Cellnet figure probably over-estimates the cost. Secondly, Vodafone's estimate is the average of two samples, the most recent of which suggested a much lower incidence of unanswered calls than the earlier sample. Vodafone's own view is that this reflects the increasing popularity of voicemail services. It also seems likely, in our view, that the incidence of unanswered calls should be decreasing as coverage improves. Finally, both the Cellnet and Vodafone estimates are based on single day samples multiplied to give a full year effect and are therefore likely to be subject to a wide margin of error.

2.472. In light of the above, we considered that it would be appropriate to make an adjustment to the level referred to in paragraph 2.448, based on the average between Cellnet and Vodafone estimates. Accordingly, we assume that 2.7 per cent of call minutes relate to unanswered and diverted calls which are currently charged for and that the costs of these should, in future, be recovered from successful

incoming calls. Applying this figure to 1999/2000 means that an adjustment of 0.32 ppm must be added to the sum specified in Table 2.2 (see paragraph 5.154). We see no reason why this should not reduce in line with other costs in subsequent years.

Formal conclusions on licence modifications

2.473 Returning to the licence modifications required to remedy the adverse effects of Cellnet's and Vodafone's termination charges, we consider that there should be a modification establishing a ceiling on the weighted average termination charge that can be made by Cellnet or Vodafone in 1999/2000 and providing for that ceiling to be adjusted in each of the following two years by an RPI-X formula. The initial ceiling should be set at the level of our public interest benchmark for 1999/2000 (11.38 ppm) uplifted by an adjustment of 0.32 ppm to allow for the recovery of the costs of unanswered and diverted calls. In each of the following two years, the initial ceiling of 11.70 ppm should be adjusted by RPI-9 which is approximately equal to the expected fall in efficiently incurred costs. In order to ensure full compliance with the price control, we believe that the licence modification should also provide for any over-recovery through charges that exceed the proposed ceilings to be made good by Cellnet or Vodafone in the following year.

2.474. We conclude that the adverse effects specified in paragraph 2.390 could be remedied or prevented by modifications to the conditions of the licence of Cellnet, and that the adverse effects specified in paragraph 2.392 could be remedied by modifications to the conditions of the licence of Vodafone. The licence modifications by which those adverse effects could be remedied or prevented are modifications to:

(a) require that the average of the individual rates of termination charge made by the licence holder, when weighted according to its actual traffic profiles (see below), should not exceed:

(i) in the year to March 2000, 11.7 ppm;

(ii) in the year to March 2001, that amount adjusted by RPI-9; and

(iii) in the year to March 2002, the amount determined for the previous year, adjusted by RPI-9;

the weightings used for this purpose should be based on actual traffic profiles for the most recent year for which figures are available;

(b) allow the licence-holder to establish individual rates of charge for periods of the day or week without restriction beyond the requirement to comply with the weighted average charge specified in the licence;

(c) allow the licence-holder to set termination charges with a weighted average below the levels specified in its licence; and

(d) provide for any over-recovery through charges that exceed the proposed ceilings to be made good in the following year.

APPENDIX 1.1

(referred to in paragraphs 1.1, 2.2 and 2.313)

Terms of reference and conduct of the inquiry

1. On 5 March 1998 the DGT sent to the MMC two references relating to charges levied by Cellnet and Vodafone in respect of calls to mobiles. These references are reproduced in full below. At the same time the DGT sent a third reference to the MMC relating to charges levied by BT in respect of calls to mobiles which is also reproduced below. This reference is the subject of a separate report.

The Cellnet terms of reference

The Director General of Telecommunications, in exercise of his powers under section 13 of the Telecommunications Act 1984 ('the Act'), hereby refers to the Monopolies and Mergers Commission for investigation and report the questions:

(a) whether the following matters operate or may be expected to operate against the public interest:

the charges made by Telecom Securicor Cellular Radio Limited ('Cellnet') to operators of fixed public telecommunications systems:

for the delivery of calls to telephone handsets connected to Cellnet's mobile public telecommunications system;

for unanswered calls to such handsets; and

for the diversion of such unanswered calls; and

(b) if so, whether the effects adverse to the public interest which those levels of charges have or may be expected to have could be remedied or prevented by modifications of the conditions of the licence granted to Cellnet under section 7 of the Act on 22 March 1984.

The report on this reference shall be made within a period of six months beginning with the date of this reference.

5 March 1998

(signed)DON CRUICKSHANK

Director General of Telecommunications

The Vodafone terms of reference

The Director General of Telecommunications, in exercise of his powers under section 13 of the Telecommunications Act 1984 ('the Act') hereby refers to the Monopolies and Mergers Commission for investigation and report the questions:

(a) whether the following matters operate or may be expected to operate against the public interest:

the charges made by Vodafone Limited ('Vodafone') to operators of fixed public telecommunications systems:

(i) for the delivery of calls to telephone handsets connected to Vodafone's mobile public telecommunications system;

for unanswered calls to such handsets; and

for the diversion of such unanswered calls; and

(b) if so, whether the effects adverse to the public interest which those matters have or may be expected to have could be remedied or prevented by modifications of the conditions of the licence granted to Vodafone under section 7 of the Act on 9 December 1993.

The report on this reference shall be made within a period of six months beginning with the date of this reference

5 March 1998

(signed)DON CRUICKSHANK

*Director General of
Telecommunications*

The BT terms of reference

The Director General of Telecommunications, in exercise of his powers under section 13 of the Telecommunications Act 1984 ('the Act'), hereby refers to the Monopolies and Mergers Commission for investigation and report the questions:

(a) whether the following matters operate or may be expected to operate against the public interest:

the charges made by British Telecommunication plc ('BT') to users of its fixed public telecommunication system, for calls to subscribers to the mobile public telecommunication systems operated by Telecom Securicor Cellular Radio Limited and by